National Institute of Environmental Health Sciences

Impact of climate change on children's health in Limpopo Province, South Africa

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Abstract:

This paper examines the impact of climate change on children's health, in the Limpopo Province of South Africa. Twenty one years climatic data were collected to analyse climatic conditions in the province. The study also employs 12 years hospital records of clinically diagnosed climate-related ailments among children under 13 years to examine the incidence, spatio-temporal, age and sex variations of the diseases. Regression analysis was employed to examine the relationships between climatic parameters and incidence of diseases and also to predict distribution of disease by 2050. The results show that the most prevalent diseases were diarrhea (42.4%), followed by respiratory infection (31.3%), asthma (6.6%) and malaria (6.5%). The incidence varied within city, with the high density areas recording the highest proportion (76.7%), followed by the medium (9.4%) and low (2.5%) density residential areas. The most tropical location, Mussina, had the highest incidence of the most prevalent disease, diarrhea, with 59.4%. Mortality rate was higher for males (54.2%). Analysis of 21 years of climatic data show that maximum temperature is positively correlated with years in four cities with r coefficients of 0.50; 0.56, 0.48 and 0.02, thereby indicating local warming. Similarly rainfall decreased over time in all the cities, with r ranging from -0.02 for Bela Bela to r Euro Surveillance (Bulletin Europeen Sur Les Maladies Transmissibles; European Communicable Disease Bulletin) 0.18 for Makhado. Results of the regression analysis show that 37.9% of disease incidence is accounted for by the combined influence of temperature and rainfall.

Source: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3367281

Resource Description

Communication:

resource focus on research or methods on how to communicate or frame issues on climate change; surveys of attitudes, knowledge, beliefs about climate change

A focus of content

Communication Audience:

audience to whom the resource is directed

Public

Exposure :

weather or climate related pathway by which climate change affects health

Temperature

Temperature: Fluctuations

Geographic Feature:

resource focuses on specific type of geography

None or Unspecified

Geographic Location:

resource focuses on specific location

Non-United States

Non-United States: Africa

African Region/Country: African Country

Other African Country: South Africa

Health Co-Benefit/Co–Harm (Adaption/Mitigation):

specification of beneficial or harmful impacts to health resulting from efforts to reduce or cope with greenhouse gases

A focus of content

Health Impact:

specification of health effect or disease related to climate change exposure

Infectious Disease, Respiratory Effect

Infectious Disease: Foodborne/Waterborne Disease, Vectorborne Disease

Foodborne/Waterborne Disease: General Foodborne/Waterborne Disease

Vectorborne Disease: Mosquito-borne Disease

Mosquito-borne Disease: Malaria

Respiratory Effect: Asthma, Other Respiratory Effect

Respiratory Condition (other) : Respiratory infection

Intervention:

strategy to prepare for or reduce the impact of climate change on health

A focus of content

Mitigation/Adaptation:

mitigation or adaptation strategy is a focus of resource

Adaptation, Mitigation

Model/Methodology:

type of model used or methodology development is a focus of resource

Outcome Change Prediction

Population of Concern: A focus of content

Population of Concern:

populations at particular risk or vulnerability to climate change impacts

Children

Resource Type:

format or standard characteristic of resource

Research Article

Timescale:

time period studied

Long-Term (>50 years)

Vulnerability/Impact Assessment:

resource focus on process of identifying, quantifying, and prioritizing vulnerabilities in a system

A focus of content